

14. The computer system of claim 11, wherein the secondary storage device includes a plurality of ports, to send [a] and receive data in parallel.

19. A method of transferring data from at least one of a plurality of a primary storage elements to a secondary storage element, the method comprising steps of:

automatically establishing a first connection from a first one of the primary storage elements to the secondary storage element to transfer a first logical object to the secondary storage element; and

transferring the first logical object from the first one of the primary storage elements directly to the secondary storage element over the first connection.

RESPONSE

Claims 1-25 are pending. Each stands rejected. Applicant believes that the claims, as amended, are now in condition for allowance. Reconsideration is respectfully requested.

Oath/Declaration

The detailed action, paragraph 1, states that the oath/declaration does not identify the Post Office address of each inventor. The Office Action notes that a Post Office address is an address in which the inventor customarily receives his or her mail. The paragraph then notes that the Post Office address should include the zip code. Applicants believe that the paragraph is directed to Applicant's failure to include a zip code or equivalent designation for the address of Mr. Galtzur.

The Office Action does not state that a new oath or declaration is required. Applicants believe this to be appropriate, as Mr. Galtzur's Post Office address is included in the oath/declaration. Although the MPEP states that the Post Office address "should" include a zip code designation, nothing in the MPEP states that this is formally required. Indeed, the address listed for Mr. Galtzur is the address at which he customarily receives his mail. Accordingly, Applicants believe that a new oath/declaration should not be required.

Applicants thank the Examiner for not requiring a new oath/declaration. For the convenience of the Patent Office, Applicants note that Mr. Galtzur's complete address is Kedoshey Kahir 6, Holon, Israel 58308.

Drawings

The Office Action objects to Figures 2B, 2C, 5, 6 and 7 because each should be designated by a legend identifying the figures as prior art. Applicants will amend the drawings and submit new drawings when claims in the present case are allowed.

Claims 1-10

Claim 1 stands rejected under 35 U.S.C. §112. The Office Action states that there is no antecedent basis for “the plurality of primary storage nodes.” Applicants thank the Examiner for identifying this error, Applicants have amended claim 1 to recite “the plurality of primary storage devices.” This limitation has proper antecedent basis. Accordingly, Applicants request that the objection be withdrawn.

Claim 1 also stands rejected under 35 U.S.C. §102(e). The Office Action states that this claim is anticipated by U.S. Patent No. 6,052,341 issued to Bingham et al. (“Bingham”). This rejection is respectfully traversed. Although the Bingham patent may not be prior art, Applicants need not reach this issue because the Bingham patent does not render any pending claim unpatentable.

The Bingham patent discloses a device element allocation manager to connect a multi-library system with multiple hosts. As indicated with respect to Figure 3, the disclosed system may include two hosts 310, 312 that are directly connected to cross bar switches labeled SW. These switches are used to connect the host computers 310, 312 to physical disk drives 320, 322, 324, 326. These drives may mount and dismount tapes 342 contained in libraries or bins. The application refers to such tapes as “data storage media” located in the “bins” 342. (Column 4, lines 51-61; column 6, lines 49-59.)

Claim 1 recites a host domain that includes host computers and a storage domain that includes a plurality of primary storage devices, a secondary storage device and a switched network coupled to the plurality of primary storage devices and the secondary storage device. The Bingham patent does not disclose such a computer system.

The Bingham patent does not disclose a plurality of primary storage devices coupled to a switched network together with a secondary storage device. In the Bingham patent, the host computers are connected directly over a switched network to a secondary storage device.

The Office Action states, however, that a switching network in Bingham may be used to connect a host to two or more drives of a set of drives, which the Office Action calls "primary storage devices." To the extent that the Office Action is referring to drives 320, 322, 324 and 326 of Bingham as primary storage devices, reliance on the Bingham patent is improper. The drives are used to access the storage media contained in the bins, e.g., tape drives that are used to access tapes. They are not storage devices unless considered together with the tapes.

In any event, the Bingham patent certainly does not disclose a switched network to connect the drives (called primary storage devices in the Office Action) to the physical storage media (called the secondary storage devices in the Office Action). Quite the contrary, Bingham suggests use of a "robotic device" as an "accessor" to permit the physical drives to be loaded with the data storage media. (Column 4, line 62; column 5, line 6.) Accordingly, even if the drives were "primary storage devices," those drives are not coupled to any secondary storage device (e.g., the bins) by a switched network. As a result, Bingham cannot anticipate claim 1 and the rejection should be withdrawn.

Claims 2-10 depend from claim 1 and are believed to be in condition for allowance for at least the same reasons.

Claims 11-18

Claim 14 stands objected to, based on an informality. The Office Action states that "send a receive" should be replaced with "send and received." Applicants thank the Examiner for identifying this informality and have requested the appropriate amendment. Accordingly, this objection should be withdrawn.

Claim 11 stands rejected under 35 U.S.C. §102(e). The Office Action states that this claim is anticipated by the Bingham patent discussed above.

Claim 11 recites a heterogeneous plurality of host computers, a plurality of primary storage devices and a secondary storage device. The Office Action assumes that the physical drives of the Bingham patent are primary storage devices while the physical storage media of the Bingham patent is a secondary storage device. As explained above, the Bingham patent simply discloses multiple physical drives that may access one or more tape libraries. Each physical drive is not by itself a primary storage device. To the contrary, those drives are used simply to access the tapes contained in the library or bins.

Accordingly, the Bingham patent does not disclose heterogeneous plurality of host computers, a plurality of primary storage device and a secondary storage device. The Bingham patent cannot anticipate this claim. Applicants respectfully request that the rejection be withdrawn.

Claim 12-18 depend from claim 11 and are believed to be in condition for allowance for at least the same reasons.

Claims 19-25

Claim 19 has been amended to cure certain informalities in the language of claim 19.

Claim 19 also stands rejected under 35 U.S.C. §102(e). The Office Action states that this claim is anticipated by the Bingham patent. The rejection is respectfully traversed.

Claim 19 recites automatically establishing a first connection from a first one of the primary storage elements to a secondary storage element. The Office Action states that the physical drives of the Bingham patent are primary storage elements and the physical tapes are secondary storage elements. For the reasons explained above, Applicants believe that the Office Action does not properly apply the Bingham reference. Accordingly, Applicants request the rejection be withdrawn.

Claims 20-25 depend from claim 19 and are believed to be allowable for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.